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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/761,101	01/20/2004	Donald R. Loveday	1999U026.RE.US	4294

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EXAMINER	
CHEUNG, WILLIAM K	

ART UNIT	PAPER NUMBER
1796	

MAIL DATE	DELIVERY MODE
04/06/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/761,101	LOVEDAY ET AL.	
	Examiner	Art Unit	
	WILLIAM K. CHEUNG	1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 February 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,7-10,12,15,17,19-21 and 49* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,7-10,12,15,17,19-21 and 49* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *121608*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. The examiner acknowledges the receipt of the IDS filed December 16, 2008, and the amendment filed February 23, 2009. Claims 2-6, 11, 13-14, 16, 18, 22-48 have been cancelled, and new claim 49 has been added. Claims 1, 7-10, 12, 15, 17, 19-21, 49 are pending.

Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 1, 7-10, 12, 15, 17, 19-21, 49 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-38 of U.S. Patent No. 6,271,325 in view Ewen et al. (US 4,530,914). Regarding the claimed

invention, the invention of claims 1-38 of U.S. Patent No. 6,271,325 clearly teach the invention that relates to a polymerization process involving a tridentate catalyst that is substantially identical to the one as claimed.

The difference between the invention of claims 1-38 of U.S. Patent No. 6,271,325 and the invention as claimed is that the invention of claims 1-38 of U.S. Patent No. 6,271,325 does not involve a second metallocene catalyst.

However, Ewen et al. (col. 2, line 24 to col. 3, line 2; col. 10, claim 3) clearly teach a polymerization process involving using at least two or more metallocene catalyst. Motivated by the expectation of success of developing a polymerization process that can be used to produce a broad and multimodal molecular with distribution (col. 1, line 5-10), it would have been obvious to one of ordinary skill in art to incorporate the second metallocene catalyst teaching of Ewen et al. into the invention of claims 1-38 of U.S. Patent No. 6,271,325 to obtain the invention as claimed.

Applicant's arguments filed February 23, 2009 have been fully considered but they are not persuasive. Applicants argue that a terminal disclaimer will be filed when the claims are allowable. Therefore, the instant ODP rejection is maintained.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 1, 7-10, 12, 15, 17, 19-21, 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over McConville et al. (US 6,271,325), in view of Ewen et al. (US 4,530,914).

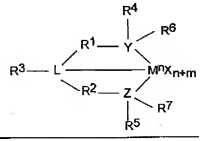
1. (Currently Amended) A process for polymerizing olefin(s) comprising, combining said olefin(s), a catalyst composition having a first catalyst [system] component comprising a Group 15 containing [bidentate or] tridentate ligated Group 3 to 7 metal compound wherein the Group 3 to 7 metal atom is bound to at least one leaving group and to [at least two] three Group 15 atoms, and wherein [at least one of the at least] two of the Group 15 atoms [is bound to a group 15 or 16 atom] are each bound to the third Group 15 atom through a bridging group; and a second catalyst [system] component,

wherein said second catalyst component is a metallocene compound;

wherein said first catalyst component and said second catalyst component are added to a polymerization reactor in one of a solution, a suspension or an emulsion;

wherein the polymerization process is a continuous gas or slurry phase process, and

wherein the Group 15 containing tridentate ligated hafnium catalyst compound is represented by the formula:



Formula (I)

wherein M is a Group 3 to 7 metal;
each X is independently a leaving group;
n is the oxidation state of M;
m is the formal charge of the Y, Z and L ligand;
L is a Group 15 element;
Y is a Group 15 element;
Z is a Group 15 element;
R^1 and R^2 are independently a linear, branched, or cyclic C_2 to C_{20} alkylene group;
R^3 is a hydrocarbon group, hydrogen, a halogen, or a heteroatom containing group;
R^4 and R^5 are independently an alkyl group, an aryl group, substituted aryl group, a cyclic alkyl group, a substituted cyclic alkyl group, a cyclic arylalkyl group, a substituted cyclic arylalkyl group or multiple ring system;
R^1 and R^2 may be interconnected to each other, and/or R^4 and R^5 may be interconnected to each other; and
R^6 and R^7 are independently absent, or hydrogen, an alkyl group, halogen, heteroatom or a hydrocarbyl group.

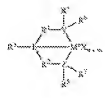
McConville et al. (abstract; col. 14, claim 1) disclose an olefin polymerization process in the gas phase or slurry phase comprising a catalyst in the presence of an activator that is substantially identical to the catalyst system as claimed. McConville et al. (col. 15, claims 16, 17) clearly teach a polymerization process involving ethylene and propylene. Regarding the claimed comonomers, McConville et al. (col. 6, line 41-49)

clearly teach a copolymerization process involving comonomers having four or more carbons.

The difference between the invention of claims 1, 7-10, 12, 15, 17, 19-21, 49 and McConville et al. is that McConville et al. do no teach a process involving a second metallocene catalyst.

However, Ewen et al. (col. 2, line 24 to col. 3, line 2; col. 10, claim 3) clearly teach a polymerization process that involves using at least two or more metallocene catalysts. Motivated by the expectation of success of developing a polymerization process that can be used to produce a broad and multimodal molecular with distribution (col. 1, line 5-10), it would have been obvious to one of ordinary skill in art to incorporate the second metallocene catalyst teaching of Ewen et al. into McConville et al. to obtain the invention as claimed.

Applicant's arguments filed February 23, 2009 have been fully considered but they are not persuasive. Applicants argue that McConville et al. do no teach a process involving a second metallocene catalyst comprising an element from Group 15. However, applicants must recognize that McConville et al. (abstract; col. 14, claim 1) clearly disclose an olefin polymerization process in the gas phase or slurry phase comprising a catalyst in the presence of an activator that is substantially identical to the catalyst system as claimed.



wherein
M is a group 3 to 14 metal,
each X is independently an anionic leaving group,
n is the oxidation state of M,
m is the formal charge of the YZL ligand,
Y is a group 15 element,
Z is a group 15 element,
L is a group 15 or 16 element,
R^1 and R^2 are independently a C_1 to C_{50} hydrocarbon group, a heteroatom containing group, silicon, germanium, tin, lead, phosphorus, a halogen,
R^1 and R^2 may also be interconnected to each other,
R^3 is absent, or is hydrogen, a group 14 atom containing group, a halogen, a heteroatom containing group,
R^4 and R^5 are independently an aryl group, a substituted aryl group, a cyclic alkyl group, a substituted cyclic alkyl group, or multiple ring system,
R^6 and R^7 are independently absent or hydrogen, halogen, a heteroatom or a hydrocarbyl group, or a heteroatom containing group.

However, Ewen et al. (col. 2, line 24 to col. 3, line 2; col. 10, claim 3) clearly teach a polymerization process that involves using at least two or more metallocene catalysts. Motivated by the expectation of success of developing a polymerization process that can be used to produce a broad and multimodal molecular with distribution (col. 1, line 5-10), it would have been obvious to one of ordinary skill in art to incorporate the second metallocene catalyst teaching of Ewen et al. into McConville et al. to obtain the invention as claimed.

Regarding applicants' argument on the claimed "continuous" feature, McConville et al. (abstract; col. 14, claim 1) disclose an olefin polymerization process in the gas phase or slurry phase comprising a catalyst in the presence of an activator that is substantially identical to the catalyst system as claimed, that are inherently continuous.

Regarding applicants' argument that Ewen et al. do not teach a mixture of catalyst system comprising a non-metallocene type catalyst, applicants fail to recognize that the argument is not supported by the claims as written since the claims do not restrict a catalyst system comprising a non-metallocene catalyst.

In view of the reasons set forth above, the instant rejection is maintained.

6. Claims 1, 7-10, 12, 15, 17, 19-21, 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsunaga (US 6,294,495) in view of Ewen et al. (US 4,530,914).

Matsunaga (abstract; col. 2, line 3-48) discloses tridentate structure as defined by formula (A). Matsunaga (col. 8, line 20-25) clearly indicates that the polymerization process can be carried out in liquid phase, such as solution, slurry, suspension, bulk phase or combination thereof. Regarding the claimed activator, Matsunaga (col. 5, line 18-65) clearly teach the use of a co-catalyst (or activator). Regarding the claimed comonomers, Matsunaga (col. 9, line 40-49) disclose comonomers having the number of carbons that clearly met the feature of claim 13.

The difference between Matsunaga and the invention as claimed is that Matsunaga does not involve a second metallocene catalyst.

However, Ewen et al. (col. 2, line 24 to col. 3, line 2; col. 10, claim 3) clearly teach a polymerization process involving using at least two or more metallocene catalyst. Motivated by the expectation of success of developing a polymerization process that can be used to produce a broad and multimodal molecular with distribution

(col. 1, line 5-10), it would have been obvious to one of ordinary skill in art to incorporate the second metallocene catalyst teaching of Ewen et al. into Matsunaga to obtain the invention as claimed.

Applicant's arguments filed February 23, 2009 have been fully considered but they are not persuasive.

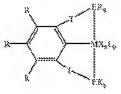
Applicants argue that Matsunaga is generally directed to an activated tridentate mono-anionic-ligand-based transition metal catalyst in a reduced oxidation state for olefin polymerization. Applicants fail to recognize that argument is not supported by the claims as written.

Regarding applicants' argument that Matsunaga does not teach a catalyst system comprising a Group 15 element, Matsunaga (abstract; col. 2, line 3-48) discloses tridentate structure as defined by formula (A).

In a preferred embodiment, the present invention is directed to a indenoate catalyst system for the polymerization of α-olefins comprising the reaction product of (a) an organometallic complex of one of the formulae:

(A)

(B)



wherein M is a transition metal from Groups 4–9 in a reduced oxidation state; each X is independently halogen, alkoxide, aryloxide, amide, phosphide, hydride, hydrocarbyl, substituted hydrocarbyl, halocarbyl, substituted halocarbyl, hydrocarbyl- or halocarbyl-substituted organometalloid, or two X groups are joined and bound to the transition metal or an L group to form a ring structure, or one or more of X can contain an L group; L is a neutral donor group which stabilizes the complex, each E is independently a neutral donor group selected from Groups 15 and 16; E' is a monoanionic donor group selected from Group 15; R has the same definition as X but may be the same or different; T is a bridging group containing an element or combination of elements from Groups 13–16; n is a number from 1 to 3 which is determined by counterbalancing the charge on the transition metal such that the transition metal remains in a reduced oxidation state and the overall charge on the complex is neutral, p is a number from 0 to 3 as needed to stabilize the complex; q is 1 or 2 such that E remains a neutral donor group, and (b) a catalyst activator compound, E is preferably selected from N, P, S and O and E' is preferably N or P. M is preferably Ti, V, Cr, Mn, Fe or Co. The catalyst activator compound can be alkylaluminoxane, an alkyl aluminum cocatalyst activator, or an ionizing noncoordinating anion precursor compound.

Applicants argue that Matsunaga does not teach a polymerization process that is "continuous", applicants must recognize that Matsunaga (col. 8, line 20-25) clearly indicates that the polymerization process can be carried out in liquid phase, such as solution, slurry, suspension, bulk phase or combination thereof, that are inherently "continuous" processes, as affirmed in Matsunaga (col. 8, line 64-67).

65 is typically removed by cooling. Gas phase polymerization
can be conducted, for example, in a continuous fluid bed
gas-phase reactor operated at 2000–3000 kPa and 60–160 °

Further, Ewen et al. (col. 2, line 24 to col. 3, line 2; col. 10, claim 3) clearly teach a polymerization process involving using at least two or more metallocene catalyst. Motivated by the expectation of success of developing a polymerization process that can be used to produce a broad and multimodal molecular with distribution (col. 1, line 5-10), it would have been obvious to one of ordinary skill in art to incorporate the second metallocene catalyst teaching of Ewen et al. into Matsunaga to obtain the invention as claimed.

In view of the reasons set forth above, the instant rejection is maintained.

Conclusion

7. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William K Cheung whose telephone number is (571) 272-1097. The examiner can normally be reached on Monday-Friday 9:00AM to 2:00PM; 4:00PM to 8:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David WU can be reached on (571) 272-1114. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/William K Cheung/
Primary Examiner, Art Unit 1796

William K. Cheung, Ph. D.
Primary Patent Examiner
March 23, 2009